We claim:

1. A catalyst system for olefin polymerization comprising an organic transition metal compound and, as cocatalyst, an ionic compound made up of anions of the formula (Ia),

$$\left[Al(OR^1)_4 \right]^- \qquad \text{(Ia)}$$

where

the radicals R^1 are identical or different and are each, independently of one another, a radical $R^2R^3(CF_3)_2$,

R^2 is a carbon or silicon atom and

R^3 is hydrogen, C_1-C_{20}-alkyl, C_1-C_{20}-fluoroalkyl, C_6-C_{20}-aryl, C_6-C_{20}-fluoroaryl, C_7-C_{40}-arylalkyl, C_7-C_{40}-fluoroarylalkyl, C_7-C_{40}-alkylaryl, C_7-C_{40}-fluoroalkylaryl or an SiR^4_3 group, where

R^4 may be identical or different and is each C_1-C_{20}-alkyl, C_1-C_{20}-fluoroalkyl, C_6-C_{20}-aryl, C_6-C_{20}-fluoroaryl, C_7-C_{40}-arylalkyl, C_7-C_{40}-fluoroarylalkyl, C_7-C_{40}-alkylaryl or C_7-C_{40}-fluoroalkylaryl,

and Lewis-acid cations or Brönsted acids as cations.

2. A catalyst system as claimed in claim 1, wherein the cocatalyst comprises, as Lewis-acid cations, cations of the formula (Ib),

$$\left[((M^1)^{a+})Q_1Q_2...Q_z \right]^{d+} \qquad \text{(Ib)}$$

where

M^1 is an element of groups 1 to 16 of the Periodic Table of the Elements,

Q_1 to Q_z are singly negatively charged groups such as C_1-C_{28}-alkyl, C_6-C_{15}-aryl, alkylaryl, arylalkyl, haloalkyl, haloaryl each having from 6 to 20 carbon atoms in the aryl radical and from 1 to 28 carbon atoms in the alkyl radical, C_3-C_{10}-

cycloalkyl which may bear C_1-C_{10}-alkyl groups as substituents, halogen, C_1-C_{28}-alkoxy, C_6-C_{15}-aryloxy, silyl or mercaptyl groups,

a is an integer from 1 to 6 and

z is an integer from 0 to 5, and

d corresponds to the difference a-z, but d is greater than or equal to 1.

3. A catalyst system as claimed in claim 1, wherein the cocatalyst comprises, as cations, Brönsted acids of the formula (Ic),

$$\left[AR^5_2H \right]^+ \qquad \text{(Ic)}$$

where

A is an element of group 15 of the Periodic Table of the Elements and

R^5 may be identical or different and is each, independently of one another, C_1-C_{20}-alkyl, C_1-C_{20}-haloalkyl, C_1-C_{10}-alkoxyl C_6-C_{20}-aryl, C_6-C_{20}-haloaryl, C_6-C_{20}-aryloxy, C_7-C_{40}-arylalkyl, C_7-C_{40}-haloarylalkyl, C_7-C_{40}-alkylaryl or C_7-C_{40}-haloalkylaryl.

4. A catalyst system as claimed in claim 3, wherein the cocatalyst has the formula (II),

$$\left[Al(OR^1)_4 \right]^- \left[AR^5_2H \right]^+ \qquad \text{(II)}$$

where

R^1 may be identical or different and is each, independently of one another, a radical $R^2R^3(CF_3)_2$,

R^2 is a carbon or silicon atom,

R^3 is hydrogen, C_1-C_{20}-alkyl, C_1-C_{20}-fluoroalkyl, C_6-C_{20}-aryl, C_6-C_{20}-fluoroaryl, C_7-C_{40}-arylalkyl, C_7-C_{40}-fluoroarylalkyl, C_7-C_{40}-alkylaryl, C_7-C_{40}-fluoroalkylaryl or an SiR^4_3 group, where

R^4 may be identical or different and is each C_1-C_{20}-alkyl, C_1-C_{20}-fluoroalkyl, C_6-C_{20}-aryl, C_6-C_{20}-fluoroaryl, C_7-C_{40}-arylalkyl, C_7-C_{40}-fluoroarylalkyl, C_7-C_{40}-alkylaryl or C_7-C_{40}-fluoroalkylaryl,

A is an element of group 15 of the Periodic Table of the Elements and

R^5 may be identical or different and is each, independently of one another, C_1-C_{20}-alkyl, C_1-C_{20}-haloalkyl, C_1-C_{10}-alkoxyl, C_6-C_{20}-aryl, C_6-C_{20}-haloaryl, C_6-C_{20}-aryloxy, C_7-C_{40}-arylalkyl, C_7-C_{40}-haloarylalkyl, C_7-C_{40}-alkylaryl or C_7-C_{40}-haloalkylaryl.

5. A catalyst system as claimed in any of claims 1 to 4 which further comprises an organometallic compound.

6. A catalyst system as claimed in any of claims 1 to 5 which further comprises an inorganic or organic support.

7. A process for preparing a catalyst system as claimed in claim 6, which comprises firstly bringing the support into contact with an organometallic compound and adding the organic transition metal compound and the cocatalyst to the reaction product.

8. A catalyst system for the polymerization of olefins which is obtainable as set forth in claim 7.

9. A process for the polymerization of olefins in which a catalyst system as set forth in any of claims 1 to 8 is used.